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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/695,261

10/27/2003

Horng-Bin Hsu

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12/13/2004

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EXAMINER

LEE, WILSON

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/695,261

Applicant(s)

HSU, HORNG-BIN

Examiner

Wilson Lee

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections – 35 U.S.C. 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 6-8, 10-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Han et al. (6,747,409).

Regarding Claim 1, Han discloses a cold cathode fluorescent lamp comprising:

- a first substrate (31) (See Figure 3);
- a plurality of electrode pairs (32, 33), the plurality of electrode pairs being disposed on the first substrate (31) (See Figure 3), each of the plurality of electrode pairs includes an X electrode (32) and a Y electrode (33);
- a second substrate (42) disposed above the first substrate (31) (view Figure 3 upside down) (See Figure 3);

- a plurality of barrier ribs (44) disposed forming a plurality of gas discharge space (50) between the first substrate and the second substrate, each of the plurality of electrode pairs corresponding to each of the plurality of gas discharge space;
- a fluorescent material (45) disposed on inner walls of the plurality of gas discharge space (50) (See Figure 3); and
- a discharge gas (Ne or Xe) disposed in the plurality of gas discharge space (50) (See Col. 6, lines 2-9).

Regarding Claim 6, Han discloses that the X electrodes (32) of the plurality of electrode pairs are connected in parallel (See Figure 3).

Regarding Claim 7, Han discloses that the Y electrodes (33) of the plurality of electrode pairs are connected in parallel (See Figure 3).

Regarding Claim 8, Han discloses that the plurality of electrode pairs disposed in an order of the X electrode (32) and the Y electrode (33) alternately, on the first substrate (31).

Regarding Claim 10, Han discloses that a dielectric layer (34) disposed on the plurality of electrode pairs (32, 33) and a portion (45) of the fluorescent material (See Figure 3).

Regarding Claims 11, 12, Han discloses that the discharge gas is an inert gas (Ne or Xe) (See Col. 1, lines 11-18, Col. 2, lines 36-38, Col. 6, lines 2-9).

Regarding Claims 13, 14, Han discloses that the plurality of electrode pairs is comprised of metal (Cr-Cu-Cr) (See Col. 3, lines 60-67 and Col. 5, lines 34-40).

Claims 1, 5-8, 10 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoo et al. (6,787,981).

Regarding Claim 1, Yoo discloses a cold cathode fluorescent lamp comprising:

- a first substrate (20 or "second substrate") (See Figure 1 or Col. 2, lines Col. 2, lines 53-54);
- a plurality of electrode pairs (26a, 26b or first and second electrodes) (See Figure 2 or Col. 2, lines 50-51), the plurality of electrode pairs being disposed on the first substrate (20) (See Figure 1 or Col. 2, lines Col. 2, lines 53-54), each of the plurality of electrode pairs includes an X electrode (26a or first electrode) and a Y electrode (26b or second electrodes);
- a second substrate (10 or "first substrate") disposed above the first substrate (20 or "second substrate") (See Col. 2, lines 48-49);
- a plurality of barrier ribs (See Col. 2, lines 54-56) disposed forming a plurality of gas discharge space (discharge areas. See Col. 2, lines 55-60) between the first substrate and the second substrate, each of the plurality of electrode pairs corresponding to each of the plurality of gas discharge space;
- a fluorescent material (fluorescent layer. See Col. 2, lines 47-48) disposed on inner walls (on tops) of the plurality of gas discharge space (See Figure 1);
and
- a discharge gas (discharge gas in discharge space. See Col. 2, lines 6-16) disposed in the plurality of gas discharge space (discharge areas) (See Col. 2, lines 55-60).

Regarding Claim 5, Yoo discloses that the plurality of barrier ribs is comprised of dielectric materials (glass) (See Col. 5, lines 22-26).

Regarding Claim 6, Yoo discloses that the X electrodes (26a) of the plurality of electrode pairs are connected in parallel (See Figure 2).

Regarding Claim 7, Yoo discloses that the Y electrodes (26b) of the plurality of electrode pairs are connected in parallel (See Figure 2).

Regarding Claim 8, Yoo discloses that the plurality of electrode pairs disposed in an order of the X electrode (26a) and the Y electrode (26b) alternately, on the first substrate (20 or "second substrate").

Regarding Claim 9, Yoo discloses that the plurality of electrode pairs is disposed in an order to X electrode, the Y electrode, the Y electrode, X electrode on the first substrate (See labeled figure 2).

Regarding Claim 10, Yoo discloses that a dielectric layer (22) disposed on the plurality of electrode pairs (26a, 26b) and a portion (12) of the fluorescent material.

Regarding Claim 11, Yoo discloses that the discharge gas is an inert gas (non-volatile gas, or motionless, stable gas) (See Claim 7).

Claim Rejections – U.S.C. 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoo et al. (6,787,981) in view of Hibino et al. (6,800,010).

Regarding Claims 2 and 3, Yoo discloses that the plurality of barrier ribs are comprised of strips (See Figure 3) but does not explicitly disclose that the width of the bottom of the barrier ribs is wider than that of the top of the barrier ribs. However, Hibino teaches a process for polishing barrier ribs to a triangle top that prevents dust (See Col. 15, lines 38-58). It would have been obvious to one of ordinary skill in the art to use Hibino's process for polishing the barrier ribs to a triangle shape in Yoo in order to prevent dust as taught by Hibino.

Claims 2, 4, 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoo et al. (6,787,981) in view of Kanae et al. (5,990,617).

Regarding Claim 2, Yoo discloses that the plurality of barrier ribs are comprised of strips (See Figure 3) but does not explicitly disclose that the width of the bottom of the barrier ribs is wider than that of the top of the barrier ribs. However, Kanae teaches that a barrier rib formation method for producing a barrier rib (29) having a wider bottom than the top that obtains an increased adhesive strength (See Col. 9, lines 51-53, and Figures 2a, 2b). It would have been obvious to one of ordinary skill in the art to use Kanae's method to produce the barrier ribs in Yoo in order to attain the advantageous increased adhesive strength as taught by Kanae.

Regarding Claim 4, Yoo, in view of Kanae, discloses that the cross section of the barrier ribs is a trapezoid (See Figures 2a, 2b).

Regarding Claim 12, as discussed above, Yoo essentially discloses the claimed invention but fails to disclose that the inert gas includes one of Xe, Ne, Ar and a mixture thereof. However, Xe, Ne, Ar or a mixture of those gases are well known inert gas for discharge light emitting. Kanae discloses that the discharge space contains inert gas including Ne, Xe, etc (See Col. 9, lines 39-46). It would have been obvious to one of ordinary skill in the art that to include Ne, Xe, etc as shown by Kanae for the inert, non-volatile gas in Yoo in order to stabilize the reaction inside the discharge space for electron discharges.

Regarding Claims 13 and 14, as discussed above, Yoo essentially discloses the claimed invention but fails to explicitly disclose the plurality of electrode pairs is comprised of metal. However, it is well known that all electrodes in display device are comprised of metal in order to conduct electricity. Kanae teaches that it is known that the material of the electrodes includes Ag, Au, Al, Cu and Cr (See Col. 3, lines 19-28). It would have been obvious to one of ordinary skill in the art to use the known metallic material such as Ag, Cu and Cr-Cu-Cr alloy for the material of the electrode in Yoo in order to conduct electricity.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Han et al. (6,747,409).

Regarding Claim 9, Han discloses that the plurality of electrode pairs is disposed in an order of the X electrode, the Y electrode, the Y electrode. Although Han does not show the next electrode is X electrode. However, it would have been obvious to one of ordinary skill in the art that the next electrode is X electrode in order to enlarge the

resolution of the display because it is known to a skilled in the art that all displays nowadays including Han must have more than 4 electrodes shown in Figure 3.

Claims 2, 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Han et al. (6,747,409) in view of Hibino et al. (6,800,010).

Regarding Claims 2 and 3, Han discloses that the plurality of barrier ribs are comprised of strips (See Figure 6B) but does not explicitly disclose that the width of the bottom of the barrier ribs is wider than that of the top of the barrier ribs. However, Hibino teaches a process for polishing barrier ribs to a triangle top that prevents dust (See Col. 15, lines 38-58). It would have been obvious to one of ordinary skill in the art to use Hibino's process for polishing the barrier ribs to a triangle shape in Han in order to prevent dust as taught by Hibino.

Claims 2, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Han et al. (6,747,409).

Regarding Claim 2, Han discloses that the plurality of barrier ribs are comprised of strips (See Figure 6B) but does not explicitly disclose that the width of the bottom of the barrier ribs is wider than that of the top of the barrier ribs. However, Kanae teaches that a barrier rib formation method for producing a barrier rib (29) having a wider bottom than the top that obtains an increased adhesive strength (See Col. 9, lines 51-53, and Figures 2a, 2b). It would have been obvious to one of ordinary skill in the art to use Kanae's method to produce the barrier ribs in Han in order to attain the advantageous increased adhesive strength as taught by Kanae.

Regarding Claim 4, Han, in view of Kanae, discloses that the cross section of the barrier ribs is a trapezoid (See Figures 2a, 2b of Kanae).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Han et al. (6,747,409) in view of Yoo et al. (6,787,981).

Regarding Claim 5, Han essentially discloses the claimed invention but does not explicitly disclose that the barrier ribs are comprised of dielectric material. However, it is well known that all barrier ribs including Han are comprised of dielectric material in order to provide a barrier to insulate the electric field. Yoo discloses that the plurality of barrier ribs is comprised of dielectric materials (glass) (See Col. 5, lines 22-26) to insulate the electric field. It would have been obvious to one of ordinary skill in the art to use dielectric material such as glass as taught by Yoo in Han in order to provide a barrier to insulate electric field.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sugimoto et al. (6,821,178) discloses a method of producing barrier ribs for plasma display panel substrates. Chen (6,479,933) discloses a full-color plasma panel that uses different discharge gases to emit different colored light.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Wilson Lee whose telephone number is (571) 272-1824.

Papers related to Technology Center 2800 applications may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The official fax number is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Wilson Lee", is written over a horizontal line.

Wilson Lee
Primary Examiner
U.S. Patent & Trademark Office

12/07/04
attn: labeled figure 2 of Yoo